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Editorial

Soft Matter Photonics

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As well known, photonics in soft matters, such as liquid crystals, polymers, and even bio-tissues, is a burgeoning and important field and attracting much attention in recent years. Soft matters possess some inherent advantages such as excellent tunability, high flexibility, scalable size, easy fabrication, and adaptation to environments. The variety of interesting properties in soft matters deserves not only fundamental researches but also potential applications, especially on photonics.

The aim of this special issue is focused on the discussions and developments of soft matter photonics and related applications. In this special issue, the editors collect interesting and fruitful works on soft matter photonics, ranging from fundamental studies to applied devices. The possibility of soft matter based applications, such as sensors, tunable gratings and waveguides, and photoluminescence, are also presented in this special issue.

In the article entitled "High Sensitivity Refractive Index Sensor by D-Shaped Fibers and Titanium Dioxide Nanofilm", the authors coated the D-shaped fiber coated with nanosized titanium dioxide (TiO2) thin film as a sensing head to present a high sensitivity liquid refractive index sensor based on lossy mode resonance effect.

In the article entitled "Effect of Oxygen Flow Rate on the Optical, Electrical, and Mechanical Properties of DC Sputtering ITO Thin Films", the authors found that the oxygen flow rate has significant influence on the electrical resistivity, residual stress, and surface roughness of the indium tin oxide (ITO) thin film, which is an important material in display technologies and organic electronics.

In the article entitled "Green LED as an Effective Light Source for Curing Acrylate-Based Dental Resins in Combination with Irgacure 784", the possibility about using green light-emitting diode (LED) as the curing source for the dental resins based on the mixture of acrylate and photoinitiator Irgacure 784 was proposed. The mechanical properties were also investigated.

In the article entitled "Light Leakage of Multidomain Vertical Alignment LCDs Using a Colorimetric Model in the Dark State", the authors proposed a colorimetric model to analyzing the colorimetric properties of liquid crystal displays (LCDs). With the aid of this model, the multidomain vertical alignment- (MVA-) type LCD module could be designed for less light leakage and thus improve the contrast ratio.

In the article entitled "Voltage-Controllable Guided Propagation in Nematic Liquid Crystals", the propagation properties of a single beam in a planar nematic liquid crystals cell were discussed. On the basis of the results, the authors also demonstrated that the beam propagation can be easily coupled between two formed channels in the planar nematic liquid crystals cell by adjusting the applied voltage.

In the article entitled "Electrically Tunable Diffraction Grating Based on Liquid Crystals", a liquid crystals cell with periodic electrodes was fabricated as an electrically tunable diffraction grating. The diffraction efficiency of the grating can be adjusted by adjusting the applied voltage or the polarization of the probe beam.

In the article entitled "Angle-Scanning Surface Plasmon Resonance System with 3D Printed Components for

Biorecognition Investigation", the authors utilized the fused deposition modeling based three-dimensional printing technology to develop a rapid-prototyping surface plasmon resonance (SPR) system. The resolution of the proposed system can be as high as 6.4×10^{-6} RIU (refractive index unit).

In the article entitled "Optical Modeling Analysis of Red, Green, and Yellow Phosphors with a Blue LED", the authors evaluated the luminous properties of red, green, and yellow phosphors with a blue LED and built a corresponding optical model, which can be a cross-reference for the design towards the better LED.

In the article entitled "Enhanced Photoluminescence in Gold Nanoparticles Doped Homogeneous Planar Nematic Liquid Crystals", the authors reported that the photoluminescence of nematic liquid crystals can be enhanced with suitable amount of gold nanoparticles dopants and discussed the mechanism for the enhancement.

In the article entitled "Circular Polarization and Wavelength Selective Gratings Based on Holographic Cholesteric Liquid Crystal Templates", the liquid crystal polymer template technique was adopted to develop diffraction gratings for specific circular polarization and wavelength. The authors also demonstrated that the diffraction efficiency of the grating can be electrically controlled.

The editors expect to attract more researchers involved in soft matter photonics via sharing the fruitful and fascinating special issue.

Conflicts of Interest

As the quest editorial team of this special issue, we declare that we have no financial and personal relationships with the authors of the manuscripts submitted to this special issue that can inappropriately influence our editorial work.

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